

Date: Sat, 18 Sep 93 04:30:23 PDT  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V93 #47  
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 18 Sep 93 Volume 93 : Issue 47

## Today's Topics:

311A/B info found! Thanks!

Anyone interested in discussing PLL synthesis? (2 msgs)

NE577 Audio Compondor

Need help - wiring Icom remote mic

## Putting s-parameters into a spice simulation (again)

What kits would you like to see?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>

Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.EDU>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: Wed, 15 Sep 93 14:21:52 GMT

From: mercury.hsi.com!a3bee2.radnet.com!cyphn!randy@uunet.uu.net

Subject: 311A/B info found! Thanks!

To: ham-homebrew@ucsd.edu

I got 2 replys about the tube, and so now know, it's 10v at .64 A.

Thanks to all...greatly appreciated.

--  
B-101-KA1111

Randy KA1UNW

If you get a shock while  
servicing your equipment,  
**DON'T JUMP!**

"Works for me!"  
-Peter Keyes

You might break an expensive tube!

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Date: 17 Sep 93 15:07:35 GMT  
From: ogicse!henson!netnews.nwnet.net!raven.alaska.edu!news.acns.nwu.edu!  
merle.acns.nwu.edu!rdewan@network.ucsd.edu  
Subject: Anyone interested in discussing PLL synthesis?  
To: ham-homebrew@ucsd.edu

In article <27cilr\$mkc@newscast.West.Sun.COM>,  
Dana Myers <myers@cypress.West.Sun.COM> wrote:  
>  
>I've built some PLL synthesizers and learned quite a bit in doing so.  
>Is anyone interested in starting a thread about constructing PLL  
>synthesizers for HF and above?  
>  
Sure. I find the topic very interesting.

My experience (if one can call it that) is minimal. I have designed a few on paper using Mot chips but never tried them out. :) So they may be worthless...

Rajiv  
aa9ch  
r-dewan@nwu.edu

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Date: Sat, 18 Sep 1993 00:29:29 GMT  
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa  
Subject: Anyone interested in discussing PLL synthesis?  
To: ham-homebrew@ucsd.edu

In article <27co09\$nlm@moons.sim.es.com> datwyler@moons.sim.es.com writes:  
>Why not? It is probably as important a topic as getting < 1W RF at the  
>antenna. After all, if the 1W is out of band, it could be bad for you.  
>--  
>Douglas L. Datwyler, WR7O

Douglas, you left something very important out of the above (unintentionally, I'm sure); here, let me help: "...getting < 1W RF at the antenna yet working stations thousands of miles away." There, I'm sure that's what you intended to say, as my flooded mailbox full of notes from happy QRP homebrewers will attest..... I'd better add a :\*)

Jeff NH6IL

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Date: Wed, 15 Sep 1993 21:08:01 GMT  
From: dog.ee.lbl.gov!agate!spool.mu.edu!uwm.edu!cs.utexas.edu!csc.ti.com!  
tilde.csc.ti.com!ra.csc.ti.com!fstop.csc.ti.com!linnig@network.ucsd.edu  
Subject: NE577 Audio Compandor  
To: ham-homebrew@ucsd.edu

In article <seeler.35.748110270@UPEI.CA> seeler@UPEI.CA (David Seeler) writes:

> I am unable to find a supplier in Eastern Canada for the Signetics NE577  
> audio compandor which was used in the audio controller project published in  
> Electronics Now - Feb 1993.

You might try calling or writing the company that makes the kit to go along with the article. I think they sell the compandor chip too (they probably have a basket full of them). Here is the address I have:

C & S Electronics  
PO Box 2142  
Norwalk, CT, 06852-2142  
Fax: (203) 866-3208

I know C and S Electronics offers the following options:

- o Formed and drilled pc board for \$12.95 (+\$3 shipping)
- o Complete kit of parts and pc board, excluding power supply and cabinet, for \$24.95 (+\$3 shipping)
- o An assembled and tested ALC module (model ALC225C) for \$32.95 (+\$3 shipping)

(BTW, I have no relation to them)

-- Mike, N5QAW

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Mike Linnig, Texas Instruments Inc. | 97.43% of all statistics are made |  
Phone: (214) 575-3597 | up; most of them (83.6 percent) |  
Internet: mike.linnig@dseg.ti.com | are wrong. |  
-----+

Date: Thu, 16 Sep 93 11:08:29 GMT  
From: mnemosyne.cs.du.edu!nyx!dtcock@uunet.uu.net

Subject: Need help - wiring Icom remote mic  
To: ham-homebrew@ucsd.edu

I have an Icom IC21, and am trying to connect a headset to it.

I would like to wire the headset through a switch box with a PTT in it, but I notice the Icom mics (ie HM75) have up down and band select buttons as well.

Given that all the connections are through the mic and ext speaker jacks, that makes 5 switches, a mic and a speaker, all wired through 3 leads. plus ground and supply! I guess it is all done with resistors and capacitors (the mic isn't active is it?)

OK. So hows it done. Does anyone have a schematic for the HM75 or similar? Has anyone opened up theirs and can describe it for me. Basically, how the heck does it work???

Any information appreciated, even if it is based on other manufacturers, as it may be relevant. I have studied the circuits, but can not figure it out from there alone.

Thanks and 73s

David (GM0SYA)

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Date: 15 Sep 1993 21:23:07 GMT  
From: olivea!koriel!male.EBay.Sun.COM!uranium!raymonda@uunet.uu.net  
Subject: Putting s-parameters into a spice simulation (again)  
To: ham-homebrew@ucsd.edu

Some time ago I posted a question to the net inquiring if anyone had developed a method for representing s-parameters in a Spice simulation as a 2-port subcircuit. I got several replies giving me references for the inverse problem (i.e. outputting s-parameters from a spice run) which I already knew how to do.

This most recent thread on the subject has been addressing the problem of modeling a MESFET characterized by means of s-parameters as a spice subcircuit. As has been mentioned, this is a non-linear large signal problem. I would like to pose my original question again in the hope that perhaps their may be some new newsgroup participants that may not have seen my earlier posts.

The question:

Does anyone know how [and be willing to tell :) ] to model a linear circuit described by s-parameters as a 2-port network in spice?

I am measuring IC package interconnects with a network analyzer, and have measured s-parameter data. Currently we are creating models composed of lossy transmission lines, inductors and capacitors to represent the response of the IC package to fast rise time signals. It is possible to create models with fairly good correlation to measured data over a relatively wide bandwidth, however I would like to create a "black-box" subcircuit that could be used in simulations whose reflection/transmission characteristics could be defined by the measured s-parameter data.

Any comments, ideas, or pointers to the literature would be appreciated.

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all comments and opinions are mine and mine alone and not those of  
Sun Microsystems.

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/ \\ / / /      Raymond E. Anderson      WB6TPU  
/ /    \\ \\ Signal Integrity Engineer  
\\ / \\ / / Sun Microsystems  
/ / \\ / / 2550 Garcia Ave. MS MIL04-16  
/ \\ \\ Mountain View, CA 94043-1100  
  \\ \\  
  \\ / (408) 276-5224  
  (408) 263-9512 fax  
raymond.anderson@Sun.Com

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Date: 16 Sep 93 04:48:12 -0500  
From: pravda.sdsc.edu!news.cerf.net!usc!elroy.jpl.nasa.gov!sdd.hp.com!caen!  
uvaarpa!gmu.vax.gmu.edu!mason1.gmu.edu!sjaves@network.ucsd.edu  
Subject: What kits would you like to see?  
To: ham-homebrew@ucsd.edu

A kit or product I'd like to see: A device which removes the laugh track from television programs. You'd be a hero if you could devise such a thing.

Date: Thu, 16 Sep 93 14:55:11 GMT  
From: dtint!usenet@uunet.uu.net  
To: ham-homebrew@ucsd.edu

References <joeCDBFnI.CuG@netcom.com>, <1993Sep14.182511.21387@cyphyn.radnet.com>, <275m68\$inu@newserv.cs.sunysb.edu>xas.e  
Subject : Re: Low Cost Spectrum Analyzer

In article <275m68\$inu@newsserv.cs.sunysb.edu> Rick Spanbauer, rick@cs.sunysb.edu writes:

> Ah, but not all tv tuners are created equal. Sitting on the desk  
> in my shack are 4 Phillips UV936 tuners which include the PLL - just  
> supply 33V (2ma), +5V, +12V, hook the I2C bus to your PC parallel  
> port and you've got a tunable frontend that will deliver a 4-6 mhz  
> chunk of downconverted RF (45 mHz IF) anywhere from 50-800+ mHz.  
> An old quote I have on the 936 puts the cost at about \$33 in  
> 1-24 quantities. With the UV936 as the basic frontend, it is  
> pretty trivial to hack up a NE602 as an upconvertor to cover the  
> 0-50 mHz band and a bit more work to piece together another  
> downconvertor to cover 800-1550 (or so) mHz.

What is the smallest frequency step the Phillips tuner will tune?

How fast can it sweep?

root root@dtint.dtint.com  
Digital Technology Int. (801)226-2984  
500 W. 1200 South, Orem UT, 84057 FAX (801) 226-8438

Date: 16 Sep 1993 18:12:23 GMT  
From: swrinde!cs.utexas.edu!wupost!udel!newsserv.cs.sunysb.edu!  
rick@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <1993Sep14.182511.21387@cyphyn.radnet.com>, <275m68\$inu@newsserv.cs.sunysb.edu>, <1993Sep16.145511.2302@dtint.uucp>  
Subject : Re: Low Cost Spectrum Analyzer

Allen Wallace (allen@dtint.dtint.com) wrote:  
: In article <275m68\$inu@newsserv.cs.sunysb.edu> Rick Spanbauer,  
: rick@cs.sunysb.edu writes:

: > Ah, but not all tv tuners are created equal. Sitting on the desk  
: > in my shack are 4 Phillips UV936 tuners which include the PLL - just  
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: > downconvertor to cover 800-1550 (or so) mHz.  
: >

: What is the smallest frequency step the Phillips tuner will tune?

Smallest step is 62.5 kHz; the PLL comparison frequency is 7.8125 kHz, but the RF path has a divide by 8 prescaler that yields the  $8 \times 7.8125$  kHz = 62.5 kHz step. The idea is that one would sweep the IF passband in smaller steps, eg 10 kHz, as needed.

: How fast can it sweep?

Relatively slowly, probably due mostly to the low comparison frequency. I recall seeing a number of around 50 ms, though I do not have the datasheet in front of me at work. The slow lock time would be a problem for wide b/w sweeps, ie tuning from 800->50 mHz in 4 mHz steps would take  $(800-50)/4 * 50\text{ms} = \sim 9$  sec.

: root root@dtint.dtint.com  
: Digital Technology Int. (801)226-2984  
: 500 W. 1200 South, Orem UT, 84057 FAX (801) 226-8438

End of Ham-Homebrew Digest V93 #47

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